drop-arches, canopied by a like number of richly crocketted ogee labels with finials; the whole, inclusive of the piscina, being inserted within a square compartment, having its bollow moulding relieved with roses, and the spandrels carved in decorated tracery. The corbels under the labels exhibit male and female heads in the costume of the sixteenth century. The *benches* of the sedilia are lost, but a chair, with arabesque carving upon it, stands on the north side of the table—by the way a nowise eligible position; the altar rails are heavy and unsightly, the table a good plain oak one.

Over the sedilia occurs a beautiful pointed window of three lights, with fine geometrical tracery in the head, and supplied with label and jamb-shafts, like that over the altar. The chancel has a clerestory tier of windows, four on each side; they are of two foliated ogee headed lights "supermullioned" under depressed Tudor arches; we regret to add that the heads of these, as also of a three-lighted range in the clerestory of the nave, are without one redeeming exception blocked. The pointed chancel arch, which is recessed, chamfered, and beaded, springs from large half-round piers, each flanked by two smaller ones, with a broad cavetto between. The corbels of the original wall-pieces are carved with Lombardicks, having coronets over them. The meagre open roof, of low pitch with tie-beams, &c., was placed there towards the close of the last century.

A chancel seat, we hardly know how correct the designation, an open sitting, has lately been placed longitudinally against the south wall. With examples in two churches, each within an hour's ride, of what such seats ought to be, one is at a loss to account for the utter want of taste so prominently shewn here, for good material (oak) being so wretchedly perverted.

The rood-screen has wholly disappeared, unless indeed a quantity of *voluted* panelling, yet remaining in the vestry and elsewhere, formed portions of it; though on this we are by no means confident. The nave exhibits on each side four plain circular piers with bell-shaped capitals supporting equilateral double-faced pointed arches with chamfered soffits. The bases partake of Norman character, in form a bee-hive flattened at the sides into a square. The belfry-arch rises from large and small half-round piers; the architrave is composed of two sets of mouldings, the one continuous with the cavettos on the jambs, the other (quarter-round and filletted) springing from the encased shafts with plain moulded capitals. The timbers of the roof here are hidden by a coved ceiling, partially relieved at the extremities by scrolls, and at the spring of the arch by a large but inelegant cornice.

The polygonal pulpit, set on a mass of brick-work panelled in cement, with early-English arches, is reached through a portion of the ancient wood staircase. It stands on the south side of the nave, and has a *pendant* in the reading desk opposite. There is little to commend in the style of either, the perked up desk being only in too close keeping with the bad taste of square and high pews, some of them lined and carpetted, which occupy the aisles. The nave is without a central avenue, being crossed by a range of hollow-backed seats—the cheerless portion of such as bear

> "The trace of the sad trinity
> Of want, and pain, and sin."

The pavement is of stone throughout.

The windows in the aisles, each of three trefoiled ogee lights, with vertical tracery inserted under a depressed Tudor arch, have the central divisions supplied with transoms intersecting the head which reaches a higher elevation than the rest. The aisles have modern sloped, or lean-to roofs, ceiled between the timbers. The font, situate at the west end of the nave, somewhat in advance of the belfry-arch, is raised on two low steps forming a spacious octagonal platform. It consists of a circular marble basin placed on a modern stone pedestal, the latter spirally filletted, the other with Ionic flutings under a horizontal dancette band. The rim of the basin, which has not the convenience of a drain, is "returned" with an inverted edge. In Parkin's time there was "a neat font of stone with a modern cover, which opens below, and thereon are the four Evangelists painted." It is impossible to congratulate on the exchange.

The square tower, its outline varied by "franch" or diagonal buttresses at the west end, is divided into four stages by string courses, those under the parapet having grotesque gurgoyles in the centre: it has pinnacles at the angles, crocketted and panelled, with ogee arches. The embrasures of the parapet are in two stages, and are richly carved with quatrefoils, shields, and panels. The belfry windows, of three foliated lights under a pointed arch, are supermullioned; and square-headed windows in the third stage exhibit stone lattice-work of the same character. The west window, of four trefoiled lights, is inserted beneath an equilateral arch with the dripstone returned horizontally—a general feature here. The tracery, with exception of the head being pierced with a quatrefoil, and that the mullions cross each other, runs in vertical lines. The steeple has a newel staircase threading a semi-hexagonal projection at its north-east angle.

The south porch has been converted, by blocking the open archway, into a vestry, lighted by a single ogee-headed window on the western side. The south, or, as by this perversion, vestry door, has its jambs and the architrave above recessed and chamfered with continuous mouldings, the whole being set under a double-headed label rising from corbels, one of them a head in mascled armour. A triangular or gable-headed buttress, on the south side of the chancel, offers the first feature of the kind occurring in our survey.

"In the churchyard is an altar-tomb of stone, about six feet long and three high, and round this an inscription, which, for the antiquity of the letters, order, and disposition of them, has been engraved by the Society of Antiquaries, and is *Rob. art.* COL. LES. CEC. I. LY. HIR. VIF. Each letter has a coronet over it," a peculiarity already noticed in our remarks on the chancel. C. T.

HUNGERFORD SUSPENSION BRIDGE.

In addition to the account of this work already given (p. 169 *ante*), we append the following valuable particulars taken from a paper on the subject read by Mr. Cowper on the 18th ult., at the Royal Institution.

This bridge consists of four broad chains, viz. two chains, one above the other, on each side of the platform; each chain consists of ten and eleven links alternately, and, near the piers of eleven and twelve. This increased strength is to meet the increased strain which takes place near the piers. The chain of the Menai Bridge is only five links wide, and the chain of the Hammersmith only six links wide; but the great breadth of the Hungerford chain (viz. eleven links, or about two feet), gives them great power to resist the effects of the wind, and thus to prevent vibration.

The two piers are in height	80 feet.
The central span between the piers (being 110 feet wider than the Menai bridge)	676½ ,,
The length between the abutments	1352½ ,,
Deflection of the chain	50 ,,
Length of each link (7 in. wide, 1 in. thick)	24 ,,
Weight of each link	5½ cwt.
(The connecting pins are 4½ inches diameter).	
The whole number of links	2600
Their weight	715 tons.
The number of links in the centre span	1280
Their weight	352 ,,
Width of the platform	14 feet
Height above high water at the centre of centre span	32½ ,,
——— near the piers	28½ ,,
(giving a rise of four feet in the centre. This gives additional height for the river traffic, and produces a graceful curve, and prevents any appearance of swagging.)	
The section of the chains at the centre of centre span is	296 sq. in.
——— near the piers	312 ,,

A square inch of iron *breaks* with 27 or 29 tons, but 17½ tons is taken as the *impairing* weight, *i. e.* the weight at which it begins to stretch; we have, therefore, for the weight the bridge will actually bear,—

296 × 17½ tons = 5180 tons.
while 296 × 5 tons = 1480 tons.

is the greatest load that can be put upon it. This is taking a crowd standing close together to be 100 lb. per square foot. The entire weight of the chain, the platform, and a full load upon it, would make a load of about 1,000 tons on each pier, being about 8½ tons on each square foot of brick-work, or not quite 1½ cwt. on each square inch. The chains are attached to large wrought-iron vertical plates at the summits of the piers: these plates are firmly bolted together, and also to a strong horizontal plate,—the whole forming what is called a saddle. The saddle is not fixed to the pier, but rests on fifty friction rollers, these rest on a thick iron plate, which is supported by a solid mass of iron and timber girders. The pier itself, being pierced with arches, may be considered to consist of four columns of brickwork; the girders, therefore, are so arranged, that no weight is thrown on the *arches*, the whole weight resting on the columns. The saddle is capable of moving 18 inches each way, equal to 3 feet entire motion; so that if either span were crowded the chains would adjust themselves, and the strain be still perpendicular upon the piers, and have no tendency to pull the pier over. The method of putting up the chains was thus:—Two sets of *wire* ropes, each consisting of three ropes, were hung from abutment to abutment over the piers, in the exact situation the chains were to occupy,—these *scaffold* ropes, as they may be called, being distant from each other equal to the length of the connecting pin. A few feet above the scaffold ropes, two other ropes were hung in like manner; on these traversed two light boxes, very much resembling a carpenter's bench turned topsy-turvy. These *cradles* as they are called, were connected together, and contained two windlasses, like those over a common well; these cradles held the workmen. A barge containing the links was moored under the cradles; four men in the cradles hauled up a link; and when they had raised it above the scaffold ropes, the connecting pin was put through, and the pin being allowed to rest on the scaffold ropes, of course supported the link. The cradles were then moved forward, and two links joined to the single link, then one joined to the two; the chain consisting, thus, in the first instance, of alternately two and one links. When this two-and-one-link chain was completed, the scaffold ropes were not required, the two-and-one-link chain forming, as it were, a scaffold for the rest of the links; and thus was this bridge erected *without any scaffolding* but these few ropes, and without the slightest impediment to the navigation, or a single accident. The bridge was opened to the public on Thursday, the 1st instant.

FALL OF A VIADUCT AT ASHTON.—One of the most distressing and extensively fatal accidents occurred last Saturday week at Ashton-under-line. The Ashton branch railway, now in progress of formation, and nearly completed, is carried over the river Tame, between Dukinfield and Ashton, by a viaduct of nine arches, and it was this entire viaduct that fell, arch after arch, like a row of nine-pins; precipitating, with the viaduct, between 20 and 30 workmen, who were upon it, chiefly excavators, engaged in filling up the spandrils of the arches with soil and gravel, for the permanent way. As to the cause of the catastrophe, those who are best acquainted with the works, say the arches were very substantial and well-constructed. It is stated that close to the arch which first gave way there is an "eye" of an old coal mine, which has long since been abandoned by the miners, and that some time ago the earth near this "coal-pit eye" was seen to sink, and that it was then stated that the foundations of the arches were unsound. An inquest is now sitting on the bodies of eleven persons who were killed; and it is feared that four more will be added to the number before its conclusion, that number being still missing, and supposed to be under the ruins.

FALL OF AN ANCIENT CHURCH.—On the 14th ultimo, the eastern wall of St. Julian's Church, situate in King-street, Norwich, fell, burying the communion table and one or two pews contiguous thereto. Fortunately no one was personally injured. This sacred edifice, one of the most ancient in the city, consists of a nave and chancel with a round tower.

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